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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,015	11/14/2003	John D. Brennan	571-914	7806
1059	7590	05/17/2005	EXAMINER	
BERESKIN AND PARR 40 KING STREET WEST BOX 401 TORONTO, ON M5H 3Y2 CANADA			JUNG, UNSU	
			ART UNIT	PAPER NUMBER
			1641	
DATE MAILED: 05/17/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,015

Applicant(s)

BRENNAN ET AL.

Examiner

Unsu Jung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-49 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-25, drawn to a method of immobilizing membrane-associated molecules in silica matrices, classified in class 435, subclass 7.4, for example.
- II. Claim 26, drawn to a protein- and membrane-compatible sol gel with a liposome-assembly immobilized, classified in class 422, subclass 68.1, for example.
- III. Claim 27, drawn to a protein- and membrane-compatible sol gel with a liposome-assembly immobilized, classified in class 424, subclass 9.321, for example.
- IV. Claims 28, 30, 32, 34, 36, and 48, drawn to a method for detection of modulators of a membrane-associated molecule, classified in class 435, subclass 4, for example.
- V. Claims 29, 31, 33, 35, 37, and 49, drawn to a method for detection of modulators of a membrane-associated molecule, classified in class 436, subclass 518, for example.
- VI. Claims 38-44, drawn to an improved method for the detection of membrane potentials in sol-gel entrapped liposome assembly, classified in class 435, subclass 7.1, for example.

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- VII. Claim 46, drawn to a kit, biosensor, microarray, chromatographic or bioaffinity column, classified in class 422, subclass 61, for example.
- VIII. Claim 47, drawn to a kit, biosensor, microarray, chromatographic or bioaffinity column, classified in class 422, subclass 82.01, for example.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and IV-VI are independent and patentably distinct. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the method of Group I includes a liposome-assembly comprising the membrane-associated molecule with a protein- and membrane-compatible sol-gel precursor under conditions which allow a gel to form. This step is not required by the methods of Groups IV-VI. The method of Group IV includes exposing the protein- and membrane-compatible sol-gel prepared according to claim 1 to one or more test substances, which is not required by the methods of Groups I, V, and VI. The method of Group V includes exposing the protein- and membrane-compatible sol-gel prepared in the presence of one or more additives selected from one or more of water-soluble polymers and one or more compounds of Formula I to one or more test substances, which is not required by the methods of Groups I, IV, and VI. The method of Group VI includes obtaining a solution of liposome assembly having an indicator molecule located on the interior of the assembly, which is not required by the

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methods of Groups I, IV, and V. Therefore, the methods of Groups I and IV-VI have different modes of operation.

Inventions II, III, VII and VIII are independent and patentably distinct. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant the product of Group II is prepared by combining a liposome assembly comprising the membrane-associated molecule with a protein- and membrane-compatible sol-gel precursor, which is not required by the products of Groups III, VII, and VIII. The product of Group III is prepared by combining the liposome assembly and sol-gel precursor in the presence of one or more additives selected from one or more of water-soluble polymers and one or more compounds of Formula I, which is not required by the Groups of I, VII and VIII. The product of Group VII includes a kit, biosensor, microarray, chromatographic or bioaffinity column comprising the protein- and membrane-compatible sol-gel with a liposome-assembly immobilized by combining a liposome assembly comprising the membrane-associated molecule with a protein- and membrane-compatible sol-gel precursor, which is not required by the products of Groups II, III, and VIII. . The product of Group VIII includes a kit, biosensor, microarray, chromatographic or bioaffinity column comprising the protein- and membrane-compatible sol-gel with a liposome-assembly immobilized by combining the liposome assembly and sol-gel precursor in the presence of one or more additives selected from one or more of water-soluble polymers and one or more

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compounds of Formula I, which is not required by the products of Groups II, III, and VIII. Therefore, the products of Groups II, III, VII, and VIII have different modes of operation.

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process. For example, the product of Group I can be made using a Langmuir-Blodgett technique.

Inventions II and IV-VI are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of using that product. For example, the product of Group II can be used in an interference color reflecting apparatus for forming colors.

Inventions III and I, IV-VI are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as

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claimed can be used in a materially different process. For example, the product of Group III can be used in an interference color reflecting apparatus for forming colors.

The same reasoning discussed above is applicable to Inventions VII and VIII. For example, the products of Groups VII and VIII can be used to separate and purify modulators of membrane associated molecules.

Because these inventions are distinct for the reasons given above, have acquired a separate status in the art because of their recognized divergent subject matter, and searches for one group is not required for the others, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Unsu Jung whose telephone number is 571-272-8506. The examiner can normally be reached on M-F: 9-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Unsu Jung
Patent Examiner
Art Unit 1641


LONG V. LE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600
05/13/05